

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. \_\_\_\_\_

WASTE DISCHARGE REQUIREMENTS  
FOR  
THE JAMESTOWN TRUST I, THROUGH ITS TRUSTEE  
COUNTY OF TUOLUMNE  
ROBERT CAMERON  
GARY WILSON  
DISCHARGE OF WASTEWATER TO HARVARD MINE PIT  
TUOLUMNE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The County of Tuolumne, Robert Cameron and Gary Wilson (jointly owners), and the Jamestown Trust I through its Trustee (operator), (hereafter jointly referred to as Discharger) currently operate and own various portions of the Jamestown Mine Site. The County and Cameron each own a portion of the Tailings Management Facility (TMF) and Wilson owns the Harvard Mine Pit. The TMF and Harvard Mine Pit were previously parts of the Jamestown Gold Mine (Jamestown Mine).
2. The Jamestown Mine closure is regulated by Waste Discharge Requirements (WDRs) Order No. 97-082 which still governs mine closure and monitoring in conformance with Title 27 of California Code of Regulations, Division 2, Subdivision 1 (hereafter Title 27). The Discharger submitted a request for WDRs to discharge wastewater from the TMF to the Harvard Mine Pit. These WDRs are ancillary to WDRs Order No. 97-082.
3. These WDRs allow the discharge of degraded water from the TMF to Harvard Mine Pit. This discharge will facilitate in the closure of the TMF in compliance with Title 27.

**LITIGATION BACKGROUND**

4. On 18 December 1998, the Regional Board issued Cleanup and Abatement Order (CAO) No. 98-735 requiring the mine property owners to complete several tasks designed to investigate the extent of, and cleanup, pollution. The CAO also required closure of the TMF in compliance with Title 27. The property owners failed to comply with CAO No. 98-735 and on 17 September 1999, the Regional Board adopted Resolution No. 99-129 for referral to the Attorney General's Office for Civil Liability. On 12 December 2001 the Attorney General's Office filed a Complaint for Injunctive Relief (Complaint) in Tuolumne County Superior Court; and on 10 June 2004 the Attorney General's Office filed a First Amended Complaint (FAC) in Stanislaus County Superior Court. The Complaint and FAC (the Litigation) named the County of Tuolumne, Robert Cameron and Gary Wilson, among others, as Defendants.

5. The parties to the Litigation settled the matter in principle in 2005. These WDRs are partially based on the Settlement Documents to be signed by the parties and the Court in the Litigation. "Settlement Documents" means the Stipulated Judgments and related documents by and among the Regional Board and the other parties to the Litigation.
6. The litigation is expected to be resolved through a settlement agreement which will, among other things, establish two trusts, one to implement near and medium term remediation (Jamestown Trust I) and another to implement longer-term response actions (Jamestown Trust II). The Jamestown Trust I will be funded with money solely from the private settling defendants, for the purposes of:
  - a. Holding, investing, and disbursing funds paid to the trust pursuant to the provisions of the Stipulated Judgment;
  - b. Providing financial assurances to the Regional Board for the appropriate management of environmental conditions at and emanating from the Site, including but not limited to Phase I as described below and in more detail in the Settlement Documents;
  - c. Providing protection to surface water, groundwater and other natural resources within the jurisdiction of the Regional Board that are impacted or threatened to be impacted by releases at or from the Site;
  - d. Implementing steps to address releases and threatened releases at and from the Site, consistent with the written concurrence of the Regional Water Board in its regulatory capacity; and
  - e. Otherwise carrying out the provisions of the trust agreement.
7. To facilitate the settlement and to implement the equitable remediation obligations of the non-governmental settling defendants, Shaw Environmental Liability Solutions, LLC ("SELS") voluntarily agreed to perform the Phase I work for Jamestown Trust I on the terms and conditions set forth in the Settlement Documents, to assume the responsibility and liabilities as set forth herein, and to consent to the jurisdiction of the Regional Board. Phase I work includes but is not limited to securing regulatory closure of the TMF, undertaking certain investigation activities, and site operation and maintenance for a ten-year period. SELS shall not be considered an owner or operator of a mine, or a discharger under these WDRs, but is responsible for implementing all of the obligations of the Discharger as it relates to Phase I work to the extent provided in the settlement documents. SELS consents to the jurisdiction of the Regional Board but only to the extent of its obligation pursuant to the settlement documents. SELS' obligations under these WDRs shall terminate on its completion of Phase I work, subject to the reservations of rights of plaintiffs under the Settlement Documents.

8. To the extent of an inconsistency between the Settlement Documents and these WDRs, the Settlement Documents will control the rights and obligations of the parties to those documents.

### **FACILITY BACKGROUND**

9. The Jamestown Mine is about one mile from Jamestown in Sections 9 and 16, T1N, R14E, MDB&M as shown on Attachment A, which is attached hereto and made a part of this Order by reference.
10. The Jamestown Mine is an inactive gold mine that operated most recently from 1986 to 1994. The mine facility consists of three mine pits (including the Harvard Mine Pit), the Tailings Management Facility (TMF), a Waste Rock Storage Area (RSA), the Process Water Retention Pond (a lined Class II surface impoundment) and several storm water retention ponds. Groundwater monitoring has detected evidence that the mine facilities (principally the TMF and the RSA) are discharging mining wastes into surface water and groundwater.
11. The TMF consists of an approximately 120-acre lined tailings impoundment. The Harvard Mine Pit consists of an approximately 72-acre (maximum aerial extent), 520 feet deep (measured from the south lip) mine pit. These features are shown on Attachment B, which is attached hereto and made a part of this Order by reference. Water that drains from the TMF is collected in the Process Water Retention Pond, and discharged back to the TMF where it collects and mixes with storm water in the TMF Supernatant Pond.
12. To close the TMF, water from the Supernatant Pond, TMF, and Process Water Retention Pond will be transferred to the Harvard Mine Pit. Currently, the Harvard Mine Pit is slowly filling with groundwater. The groundwater is polluted due to interaction with rock surfaces, exposed by mining, at various locations. Stormwater from retention ponds DP-5 and DP-6 may also be transferred to Harvard Mine Pit to facilitate closure of those ponds.
13. This WDR classifies the Harvard Mine Pit as a Group B mine waste containment unit. In order for the pit to act as a waste containment unit, it must be maintained as a groundwater sink and must not release waters to un-impacted downgradient groundwater. These WDRs require that water levels in the Harvard Mine Pit be maintained below a level that would discharge to downgradient waters. Mixing TMF water and other site water with Harvard Mine Pit water will not significantly degrade the already polluted water now collecting in the Harvard Mine Pit.
14. Approximately 180 acre-feet of TMF water (mostly from the Supernatant Pond) will be discharged to the Harvard Mine Pit in the first year. An additional approximately 300 acre-feet of TMF water, mostly interstitial tailings water and groundwater, may be discharged to the Harvard Mine Pit during the five-year remediation period.

15. These WDRs are intended to be limited to Phase I work. Modifications of this Order or additional WDRs may be issued for work beyond the scope of Phase I.

### WASTE AND SITE CLASSIFICATION

16. Water quality at this site may be summarized as follows:

Constituent	Supernatant Pond	TMF	Harvard Mine Pit	Background Groundwater	Water Quality Limits <sup>1</sup>
Total Dissolved Solids (TDS) (mg/l)	2500	2600	2500	270	450
Sulfate (mg/l)	1500	1400	1200	26	250
Sodium (mg/l)	240	240	110	10	69
Magnesium (mg/l)	200	280	180	29	none
Calcium (mg/l)	180	260	200	38	none
Arsenic (mg/l)	0.021	0.025	0.87	0.002	0.01

<sup>1</sup> Water quality limits used to implement applicable water quality objectives for the protection of beneficial uses of the groundwater

17. 'Group B Mining Waste' is defined in Title 27, §22480, as either: (A) *mining wastes that consists of or contain hazardous wastes, that qualify for a variance under Chapter 11 of Division 4.5 of Title 22 of this code, provided that the RWQCB finds that such mining wastes pose a low risk to water quality; or (B) mining wastes that consist of or contain nonhazardous soluble pollutants of concentrations which exceed water quality objectives for, or could cause, degradation of waters of the state.*

18. Water in the Supernatant Pond, water draining from the tailings, and water in the Harvard Mine Pit contain concentrations that exceed water quality objectives and could cause degradation of waters of the state because they also exceed background concentrations. Therefore, these waters are classified as 'Group B Mine Waste' and as such must be discharged to a Group B Mine Waste impoundment as required by Title 27.

### SITE DESCRIPTION

19. The native material underlying the TMF and Harvard Mine Pit is fractured bedrock with highly variable hydraulic conductivity. Aquifer tests indicate that average bedrock permeabilities range from  $2 \times 10^{-6}$  to  $3 \times 10^{-4}$  centimeters per second.

20. Land uses within 1,000 feet of the Jamestown Mine are residential, agricultural, industrial and commercial.
21. The Jamestown Mine receives an average of 32.7 inches of precipitation per year as measured at the Sonora Ranger Station, approximately four miles northeast of the site. The mean pan evaporation is 78 inches per year as measured at the New Melones Dam Station, approximately 5 miles from the site.
22. The 100-year, 24-hour precipitation event is estimated to be 6.5 inches, based on Miller, Frederick, and Tracey, 1973; "Precipitation – Frequency Atlas of the Western United States, v.IX-California", NOAA Atlas 2, U.S. Dept Commerce, National Weather Service.
23. There are approximately 47 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the site.

#### **SURFACE AND GROUND WATER CONDITIONS**

24. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, Fourth Edition (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
25. Surface drainage is to Woods Creek, a tributary to the Tuolumne River, which drains to the San Joaquin River. The site drainage is in the Sonora Hydrologic Area (536.31).
26. The designated beneficial uses of the Tuolumne River (source to New Melones Reservoir), as specified in the Basin Plan, are municipal and domestic supply, agricultural supply, power supply, contact and non-contact water recreation, warm and cold freshwater habitat, and wildlife habitat.
27. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.
28. Groundwater west of the Rawhide West Fault flows toward the south. Groundwater east of the fault flows toward and is captured by Harvard Mine Pit.
29. Data from groundwater monitoring wells downgradient of the TMF and Waste Rock Storage Area (TDMW-03, -04, -12, -14, -15, -16, -18, -19, RSMW-8, -9A) demonstrate a pattern of increasing sulfate, chloride, nitrate, and TDS concentrations. The overall pattern in downgradient monitor wells is of increasing impacts which began after the start of mine operations.
30. Before active mining, first encountered groundwater was about 2.9 to 34 feet below the native ground surface. The site was dewatered for open pit mining, creating a deep

drawdown cone centered on the Harvard Mine Pit. When active mine operations ceased, the operator turned the pumps off, and groundwater levels are slowly recovering.

31. If water levels in the Harvard Mine Pit are maintained below the elevation of Woods Creek (1330 feet mean sea level (msl)) then Harvard Mine Pit water will be contained on site. These WDRs require that water levels in the Harvard Mine Pit will be maintained below 1320 feet msl. If necessary in the future, the Harvard Mine Pit will be maintained as a groundwater sink by artificial means (e.g. pumping, treating, etc.).

### **DESIGN OF WASTE MANAGEMENT UNIT**

32. The Discharger proposes to use the Harvard Mine Pit as an engineered alternative for a Group B Mine Waste surface impoundment. The engineered alternative will contain polluted water by acting as a groundwater sink.
33. Section 20080(b) of Title 27 allows the Regional Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with §20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in §20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must demonstrate that the proposed engineered alternative(s) provides protection against water quality impairment equivalent to the prescriptive standard in accordance with §20080(b)(2) of Title 27. The Discharger must also demonstrate that any proposed engineered alternative is consistent with the performance goal in accordance with §20240, §20250, and §20310 of Title 27.
34. Section 13360(a)(1) of the California Water Code allows the Regional Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
35. The Discharger proposes to discharge wastewater from the TMF and other water retention ponds to the Harvard Mine Pit, a groundwater sink. Because the Harvard Mine Pit has a lower water level than surrounding groundwater, groundwater moves toward Harvard Mine Pit. Therefore, migration of wastes from the Harvard Mine Pit to adjacent natural geologic materials, groundwater, or surface water should not occur. These WDRs require that water levels in the pit will be maintained below 1320 msl. In the future and if necessary, funds from the Settlement may be used to control water levels either by natural or enhanced evaporation, or by removal, treatment, and discharge of excess water.
36. The Discharger adequately demonstrated that construction of the prescriptive standard liner for a Group B Mine Waste surface impoundment, as described in Title 27, would be unreasonable and unnecessarily burdensome when compared to the proposed engineered

alternative and that the alternative affords equivalent protection against water quality impairment. So long as water levels in Harvard Mine Pit remain below groundwater levels, groundwater will flow toward the pit. Water levels in the pit are expected to reach equilibrium levels (maximum natural fill level) in the year 2045. At equilibrium level, water lost to evaporation will equal groundwater inflow. Hydrologic projections indicate that equilibrium levels will be sufficiently lower than groundwater levels for the pit to remain a sink. The Discharger has demonstrated that the proposed engineered alternative is consistent with the performance goals of the containment structures for a Group B Mine Waste management unit.

37. Because the Harvard Mine Pit is permitted under these WDRs as an engineered alternative to the prescriptive standards for a Group B mining surface impoundment, it is recognized that it will not likely be closed as described in Title 27 Section 22510(k).

### **CEQA AND OTHER CONSIDERATIONS**

38. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301.
39. On 24 February 1986, the Tuolumne County Board of Supervisors certified the final supplemental EIR for the Sonora Mining Corporation, California Gold Project (Jamestown Mine), in accordance with CEQA, Public Resources Code Section 21000, et seq. The EIR discloses that the project may have the following impacts: (a) deterioration of groundwater from leakage of process water/tailings waste will be mitigated by the installation of the TMS, (b) contamination of Woods Creek from accidental spills of mill reagents or tailings disposal facility rupture, and (c) contamination of groundwater from accidental spills of toxic materials.
40. The Regional Board has reviewed the EIR. WDR Order No. 97-082 provides protection to water quality equal to or more effective than the mitigation measures in the EIR relating to water quality. Compliance with WDR Order No. 97-082 will mitigate or avoid significant impacts on water quality listed in Finding 38 as follows: (a) dewatering and covering the tailings will prevent further deterioration of groundwater quality under the tailings disposal site; and (b) the threat of contamination to Woods Creek or groundwater from rupture of the tailings disposal facility is mitigated by the design of the tailings management facility. Because the site no longer operates as a gold extraction facility, mill reagents and other toxic chemicals are no longer present on site.
41. This Order implements:
- a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition; and

- b. The prescriptive standards and performance goals of California Code of Regulations, effective 18 July 1997, and subsequent revisions.

### **PROCEDURAL REQUIREMENTS**

42. The Regional Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
43. The Regional Board, in a public meeting, heard and considered all comments pertaining to these WDRs.

**IT IS HEREBY ORDERED** that Jamestown Trust I through its Trustee, the County of Tuolumne, Robert Cameron and Gary Wilson, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

#### **A. PROHIBITIONS**

1. The discharge of 'hazardous waste' related to the closure of the TMF and discharges into the Harvard Mine Pit at this facility is prohibited. For the purposes of this Order, the terms 'hazardous waste' and 'designated waste' are as defined in Division 2 of Title 27 of the CCR.
2. The discharge of solid waste or liquid waste to surface waters, surface water drainage courses, or groundwater is prohibited.
3. The discharge of wastes outside of a waste management unit or portions of a waste management unit specifically designed for their containment is prohibited.

#### **B. DISCHARGE SPECIFICATIONS**

##### **General Specifications**

1. Wastes shall only be discharged into, and shall be confined to, the waste management units (WMUs) specifically permitted for their containment.

##### **Protection From Storm Events**

2. Waste management units shall be designed, constructed and operated to prevent inundation or washout due to flooding events with a 100-year return period.



3. Precipitation and drainage control systems shall be designed, constructed and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
4. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.

### **Class II Surface Impoundment**

5. The surface impoundment shall consist of the Harvard Mine Pit, which will be managed to act as a groundwater sink.
6. In order to maintain containment, Harvard Mine Pit water levels shall be kept below 1320 feet msl.
7. The Harvard Mine Pit and related containment structures shall be maintained to prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 1,000-year, 24-hour precipitation conditions, and shall be designed to contain the 100-year wet season precipitation.
8. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling.
9. The surface impoundment shall be operated and maintained to prevent scouring and/or erosion of the containment features or impoundment walls at points of discharge to the impoundment and by wave action at the water line.

### **Group B Mine Tailings Facility Closure**

10. The discharge described in these WDRs will be conducted to facilitate TMF closure. The closure of the TMF and other storm water containment structures shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.

## **C. FINANCIAL ASSURANCE**

1. These WDRs are being issued to enable the implementation of certain activities related to the closure of the TMF, namely, the discharge of water from the TMF underdrains and Supernatant pond to the Harvard Mine Pit as necessary to close the TMF. The financial assurances for these activities will be provided by the Jamestown Trust I, consisting of the funds of the trust. Available information demonstrates that the combination of these agreements and financial assurances provide the Regional Board with assurance that the Phase I closure activities for the waste management unit can and will be completed.

Starting in 2007, the Trustee shall, by **30 April of each year**, prepare and submit, plans with detailed cost estimates and a demonstration of assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the waste management unit. The Trust shall provide the assurances of financial responsibility to the Regional Board as required by Title 27 CCR, Division 2, Subdivision 1, Chapter 6. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The assurances of financial responsibility shall name the Regional Board as beneficiary and shall provide that funds for corrective action shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Trust shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation. The financial assurance fund for corrective action shall be established **prior to discharging waste to the Harvard Mine Pit.**

2. Jamestown Trust I shall, by **30 April of each year (beginning 30 April 2007)**, prepare and submit, plans with detailed cost estimates and a demonstration of assurances of financial responsibility to ensure closure and post-closure maintenance of each waste management unit in accordance with its approved closure and post-closure maintenance plans. The Trust shall provide the assurances of financial responsibility to the Regional Board as required by Title 27 CCR, Division 2, Subdivision 1, Chapter 6. The assurances of financial responsibility shall provide that funds for closure and post-closure shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Trust shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.

#### **D. PROVISIONS**

1. The Trust shall comply with the Standard Provisions and Reporting Requirements, dated September 2003, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.
2. The Trust shall comply with Monitoring and Reporting Program No. - \_\_\_\_\_, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring surface waters throughout the active life of the waste management units and the post-closure maintenance period. A violation of Monitoring and Reporting Program No. R5-\_\_\_\_\_ is a violation of these waste discharge requirements.
3. **Prior to discharging waste to the Group B Mine Waste Surface Impoundment (Harvard Mine Pit) the Trust shall** establish Financial Assurance funds for corrective action, unit closure and post-closure maintenance as provided in Section C above.

4. The Trust shall maintain legible records of the volume and type of waste discharged to the surface impoundments and the manner and location of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Regional Board and of the State Water Resources Control Board, copies of these records shall be sent to the Regional Board.
5. The Trust shall provide proof to the Regional Board **within sixty days after completing final closure of the TMF** that the deed to the surface impoundment facility property, or some other instrument that is normally examined during title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:
  - a. the parcel has been used for disposal of liquid mine wastes;
  - b. land use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in WDRs for the surface impoundment; and
  - c. in the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner.
6. The Regional Board will review this Order periodically and may revise requirements when necessary.
7. The Discharger shall complete the tasks outlined in these WDRs and the attached Monitoring and Reporting Program No. \_\_\_\_\_ in accordance with the following time schedule:
  - a. **60 Days after effective date of these WDRs** submit a Revised Closure and Post-closure Maintenance Plan for the TMF that complies with Title 27 Section 22510.
  - b. By **30 April 2007** submit demonstrations of financial assurances for initiating and completing corrective actions and for closure and post-closure maintenance in accordance with C. Financial Assurance 1. and 2. above.
  - c. **Prior to discharging waste to the Harvard Mine Pit** submit a *Water Level Maintenance Plan*. This plan shall describe how water level of the pit will be maintained below 1320 msl if the water level threatens to, or does, exceed this

level.

- d. **Upon completion of the Phase I Site Investigation**, update the *Water Level Maintenance Plan*. This update shall include a data evaluation from the Phase I Site Investigation and shall include any necessary changes to the Maintenance Plan.
  - e. **60 days after completion of closure construction**, submit a Construction Quality Assurance Report for closure of the TMF in compliance with Title 27 Section 20324.
8. In the event of any change in ownership of the waste management facility, the property owner shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Regional Board.

I, Pamela C. Creedon, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on \_\_\_\_\_.

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

Attachments  
RDA; 4 April 2006